

AMENDMENTS TO THE SPECIFICATION

Please amend paragraph [0035] that begins on page 21, line 3 with the following amended paragraph:

[0035] Moreover, a directly modulated semiconductor laser was fabricated under the condition in which the Se doping concentration for the n-type InP over-cladding layer 9 was set to $8 \times 10^{19} \text{ cm}^{-3}$ ~~$2 \times 10^{19} \text{ cm}^{-3}$~~ . At this time, the layer thickness of the Ru-doped InP layer 8 was 5 μm . The n-type InP over-cladding layer 9 was hardly grown in the flat region of the Ru-doped InP layer 8 at a distance from the rising buried region thereof in the vicinity of the mesa, and thus was grown while maintaining the V-shaped-like groove structure, thereby flattening the concavo-convex shape. The 3-dB bandwidth of the optical small-signal response characteristics of the directly modulated semiconductor laser was about 30 GHz at the chip temperature of 25° C, and about 19 GHz at 95° C. The threshold current was about 5 mA at the chip temperature of 25° C, and about 24 mA at 95° C. The light output power efficiency was about 0.42 W/A at the chip temperature of 25° C, and about 0.20 W/A at 95° C. Comparing the device characteristics of this directly modulated laser with those of the directly modulated lasers described above, it is understood that the device characteristics are further enhanced.